

We Claim:

1. A method for determining importance of semantic web resources, said resources being either a class or a non-class resource, and each non-class resource belonging to one or more classes, and each class resource being a subclass of one or more parent classes, the method comprising:

5 determining a subjectivity score for each resource of a set of resources based on the number of Resource Description Format (RDF) triples of which the resource is the subject and predefined weights of the properties of the triples;

10 determining an objectivity score for each said resource based on the number of RDF triples of which the resource is the object and predefined weights of the properties of the triples;

determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents; and

15 determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs.

2. The method of claim 1, wherein said semantic web is represented as a first directed graph and resources are nodes in the graph, and properties of said semantic web are links between nodes, and further wherein said subjectivity scores and said objectivity scores are determined on the basis of the number of incoming and outgoing links for each node and the predefined weight of each link.

25 3. The method of claim 2, wherein said semantic web is represented as a second directed graph in which classes are nodes, and class relationships are edges in the second graph, and said class parents' importance factor is determined in inverse proportion to the distance between nodes.

30 4. The method of claim 2, further comprising:

determining path associations between semantic web resources by the existence of direct paths between respective nodes in said first directed graph; and

iteratively filtering said first directed graph by the importance of the resources representing the nodes to determine paths in order of importance of the vertices in the path.

5 5. The method of claim 2, further comprising:

determining join associations between two semantic web resources by the existence of paths from the respective nodes in the directed graph to a common end node or by the existence of paths to the respective nodes in the directed graph from a common start node; and

10 iteratively filtering said first directed graph by the importance of the resources representing the nodes to determine paths in order of importance of the vertices in the path.

15 6. A computer program product for determining importance of semantic web resources, said resources being either a class or a non-class resource, and each non-class resource belonging to one or more classes, and each class resource being a subclass of one or more parent classes, comprising a computer program on a storage medium, said computer program including:

20 code means for determining a subjectivity score for each resource of a set of resources based on the number of Resource Description Format (RDF) triples of which the resource is the subject and predefined weights of the properties of the triples;

code means for determining an objectivity score for each said resource based on the number of RDF triples of which the resource is the object and predefined weights of the properties of the triples;

25 code means for determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents; and

30 code means for determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs.

7. A method for determining path associations between two semantic web resources, said resources being either a class or a non-class resource, and each non-class

resource belonging to one or more classes, and each class resource being a subclass of one or more parent classes, said semantic web being represented as a first directed graph and resources are nodes in the graph, and properties of said semantic web are links between nodes, said method comprising:

- 5 determining a subjectivity score for each resource of a set of resources based on the predefined weight of each said link;
- determining an objectivity score for each said resource based on the predefined weight of each said link;
- 10 determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents;
- determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs;
- 15 determining path associations between semantic web resources by the existence of direct paths between respective nodes in said first directed graph; and
- iteratively filtering the said first directed graph by the importance of the nodes to determine paths in order of importance of the vertices in the path.

8. A computer program product for determining path associations between two semantic web resources, said resources being either a class or a non-class resource, and each non-class resource belonging to one or more classes, and each class resource being a subclass of one or more parent classes, said semantic web being represented as a first directed graph and resources are nodes in the graph, and properties of said semantic web are links between nodes, comprising a computer program on a storage medium, said computer program including:

- code means for determining a subjectivity score for each resource of a set of resources based on the predefined weight of each said link;
- code means for determining an objectivity score for each said resource based on the predefined weight of each said link;
- 30 code means for determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents;

code means for determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs;

5 code means for determining path associations between semantic web resources by the existence of direct paths between respective nodes in said first directed graph; and

code means for iteratively filtering the said first directed graph by the importance of the nodes to determine paths in order of importance of the vertices in the path.

9. A method for determining join associations between two semantic web
10 resources, said resources being either a class or a non-class resource, and each non-class resource belonging to one or more classes, and each class resource being a subclass of one or more parent classes, said semantic web being represented as a first directed graph and resources are nodes in the graph, and properties of said semantic web are links between nodes, said method comprising:

15 determining a subjectivity score for each resource of a set of resources based on the predefined weight of each said link;

determining an objectivity score for each said resource based on the predefined weight of each said link;

20 determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents;

determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs;

25 determining join associations between two semantic web by the existence of paths from the respective nodes in the directed graph to a common end node or by the existence of paths to the respective nodes in the directed graph from a common start node; and

30 iteratively filtering said first directed graph by the importance of the resources representing the nodes to determine paths in order of importance of the vertices in the path.

10. A computer program product for determining join associations between two semantic web resources, said resources being either a class or a non-class resource, and

each non-class resource belonging to one or more classes, and each class resource being a subclass of one or more parent classes, said semantic web being represented as a first directed graph and resources are nodes in the graph, and properties of said semantic web are links between nodes, comprising a computer program on a storage medium, said computer program including:

5 code means for determining a subjectivity score for each resource of a set of resources based on the predefined weight of each said link;

code means for determining an objectivity score for each said resource based on the predefined weight of each said link;

10 code means for determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents;

15 code means for determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs;

code means for determining join associations between two semantic web resources by the existence of paths from the respective nodes in the directed graph to a common end node or by the existence of paths to the respective nodes in the directed graph from a common start node; and

20 code means for iteratively filtering said first directed graph by the importance of the nodes to determine paths in order of importance of the vertices in the path.

11. A computer program to conduct the method of claim 1.

25 12. A computer program to conduct the method of claim 7.

13. A computer program to conduct the method of claim 9.

14. A system for determining importance of semantic web resources, said resources being either a class or a non-class resource, and each non-class resource belonging to one 30 or more classes, and each class resource being a subclass of one or more parent classes, the system comprising:

means for determining a subjectivity score for each resource of a set of resources based on the number of Resource Description Format (RDF) triples of which the resource is the subject and predefined weights of the properties of the triples;

5 means for determining an objectivity score for each said resource based on the number of RDF triples of which the resource is the object and predefined weights of the properties of the triples;

means for determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents; and

10 means for determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs.

15 15. A system for determining path associations between two semantic web resources, said resources being either a class or a non-class resource, and each non-class resource belonging to one or more classes, and each class resource being a subclass of one or more parent classes, said semantic web being represented as a first directed graph and resources are nodes in the graph, and properties of said semantic web are links between nodes, said system comprising:

20 means for determining a subjectivity score for each resource of a set of resources based on the predefined weight of each said link;

means for determining an objectivity score for each said resource based on the predefined weight of each said link;

25 means for determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents;

means for determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs;

30 means for determining path associations between semantic web resources by the existence of direct paths between respective nodes in said first directed graph; and

means for iteratively filtering said first directed graph by the importance of the nodes to determine paths in order of importance of the vertices in the path.

16. A system for determining join associations between two semantic web resources, said resources being either a class or a non-class resource, and each non-class resource belonging to one or more classes, and each class resource being a subclass of one or more
5 parent classes, said semantic web being represented as a first directed graph and resources are nodes in the graph, and properties of said semantic web are links between nodes, said system comprising:

means for determining a subjectivity score for each resource of a set of resources based on the predefined weight of each said link;

10 means for determining an objectivity score for each said resource based on the predefined weight of each said link;

means for determining importance of a class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the class's parents;

15 means for determining importance of a non-class resource from the respective subjectivity score and objectivity score, and a factor relating to the importance of the classes to which the resource belongs;

20 means for determining join associations between two semantic web by the existence of paths from the respective nodes in the directed graph to a common end node or by the existence of paths to the respective nodes in the directed graph from a common start node; and

means for iteratively filtering the said first directed graph by the importance of the resources representing the nodes to determine paths in order of importance of the vertices in the path.